

TECHNICAL SPECIFICATIONS

SYSTEM REQUIREMENTS

- ◆ IBM PC/XT/AT or compatibles (including 386's 486's and PS/2—Models 25 & 30)
- ◆ 8Kb or 16Kb of Memory per card at base address C0000H through DFFFFH (selectable)

POWER REQUIREMENTS

- ◆ 5V @ 750 mA
- ◆ +12V @ 40 mA
- ◆ -12V @ 25 mA

TELEPHONE INTERFACE

- ◆ 600 ohm impedance
- ◆ 300 Hz-3000 Hz frequency response
- ◆ Loop start
- ◆ Ring Detect: 30-140 Vrms (16-70 Hz)
- ◆ Loop Current: 10-80 mA DC

DIALING

- ◆ DTMF tones (0-9, *, #, A-D)
- ◆ Pulse Dialing
- ◆ Wait for Dial-tone
- ◆ Flash-hook (adjustable)

DTMF DETECTION

- ◆ DTMF receiver
- ◆ 38 ms duration (adjustable)
- ◆ -35 dBm to 0 dBm

INTERRUPTS

- ◆ PC, PC/XT—IRQ 2 through 7 (selectable)
- ◆ PC/AT, 386—IRQ 3 through 7, 9 (selectable)

PROCESSORS

- ◆ 8098 (built-in 10 bit A/D converter, multiplexer, sample and hold)
- ◆ 8032 host bus interface, SRAM controller

CAPACITY

- ◆ 2 ports per card
- ◆ Expandable to 16 ports (8 Powerline II cards)

SOFTWARE DRIVER

- ◆ Commando (requires DOS 3.0 or later)
- ◆ TSR based (software interrupt driven API)
- ◆ Multiple Language Interface (eg. 'C', Pascal, 8086 Assembler)

SPEECH

- ◆ Compression rates variable from 13-54 kbits/second
- ◆ Sampling Rate—6.76 kHz (8 bit sample)
- ◆ Algorithm—Proprietary ADPCM based
- ◆ 10 bit A/D Converter (built into 8098)
- ◆ 8 bit D/A Converter (external 1408)

CONNECTORS

- ◆ 2 RJ-11 jacks (2 lines & Local Telephone)
- ◆ 2.5 mm (audio input)
- ◆ 3.5 mm (audio output)
- ◆ 24 pin connector (digital interface for add-on options)

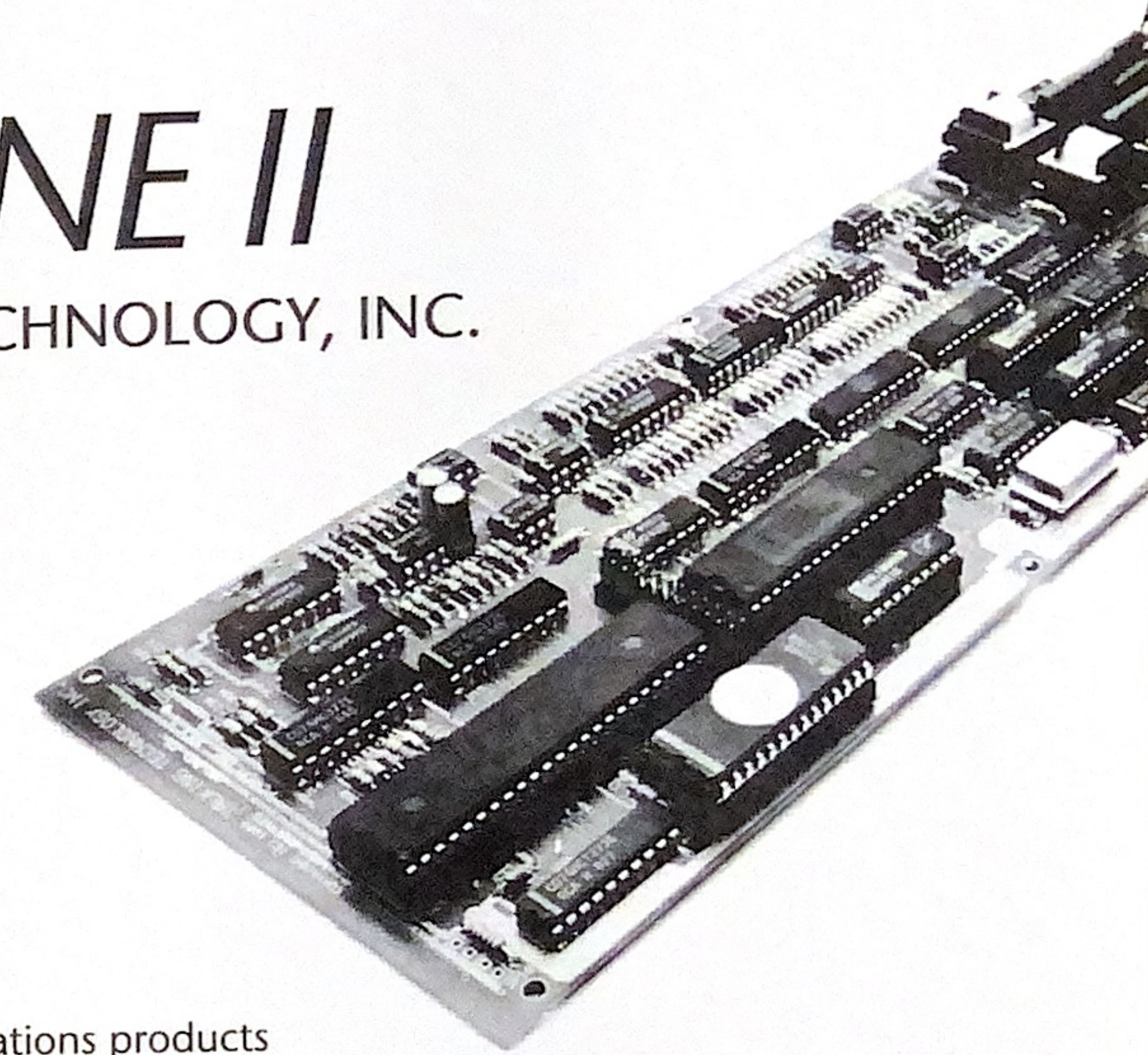
FCC SPECIFICATIONS

- ◆ Fully FCC Approved
- ◆ Part 15, subpart B GB2-4D4-POWERLINE
- ◆ Part 68 GB2-4D4-10792-VM-N
- ◆ .1 B ringer equivalence

POWERLINE II

Available from TALKING TECHNOLOGY, INC.

MULTI-LINE VOICE COMMUNICATIONS BOARD



The *Powerline II* series of voice communications products provide high quality, cost-effective solutions for the development of voice processing applications. *Powerline II* gives a developer the opportunity to mold an idea into a marketable product quickly and inexpensively with the assurance of reliability and support.

Powerline II products carry a 2 year warranty. Line for line, *Powerline II* gives you quality, reliability, and flexibility at a price which is unmatched in the voice processing market.

APPLICATIONS

Voice Messaging ◆ Call Processing ◆ Audiotex ◆ Telemarketing ◆ Order Processing ◆ Call Distribution ◆ PBX Integration ◆ Auto-Dialing ◆ Alarm Systems

POWERLINE II FEATURES

Two ports per card ◆ Sixteen ports per system ◆ Two dedicated on-board processors ◆ Digital recording and playback with real-time compression ◆ Variable compression rates from 13-54 Kbits/Second ◆ Multiple language development support ◆ Touchtone and Pulse dial decoding ◆ Amplified speaker output ◆ Voice input from line, local phone or microphone ◆ Output to lines, local phone, or speaker ◆ Built in call progress monitoring



POWERLINE II

SOFTWARE DEVELOPMENT

The Commando driver provides the application developer with an interface to the Powerline II card. Supported by demonstration software, Commando allows developers to create applications quickly in the programming language of their choice. The Commando driver enables comprehensive access to the Powerline II hardware capabilities for the development of full-featured applications.

EXTERNAL CONNECTIONS

Powerline II provides two analog loop-start connections per card. Telephone lines, PBX, or Centrex extensions can be directly connected to the card's telephone line interface. A local telephone instrument can also be connected for recording, playback, and for normal telephone use. In addition, a microphone jack is provided for recording input and a speaker output jack is also included for playback or for line monitoring. A digital interface connection to the card is provided for communication with external equipment.

CALL PROGRESS AND LINE MONITORING

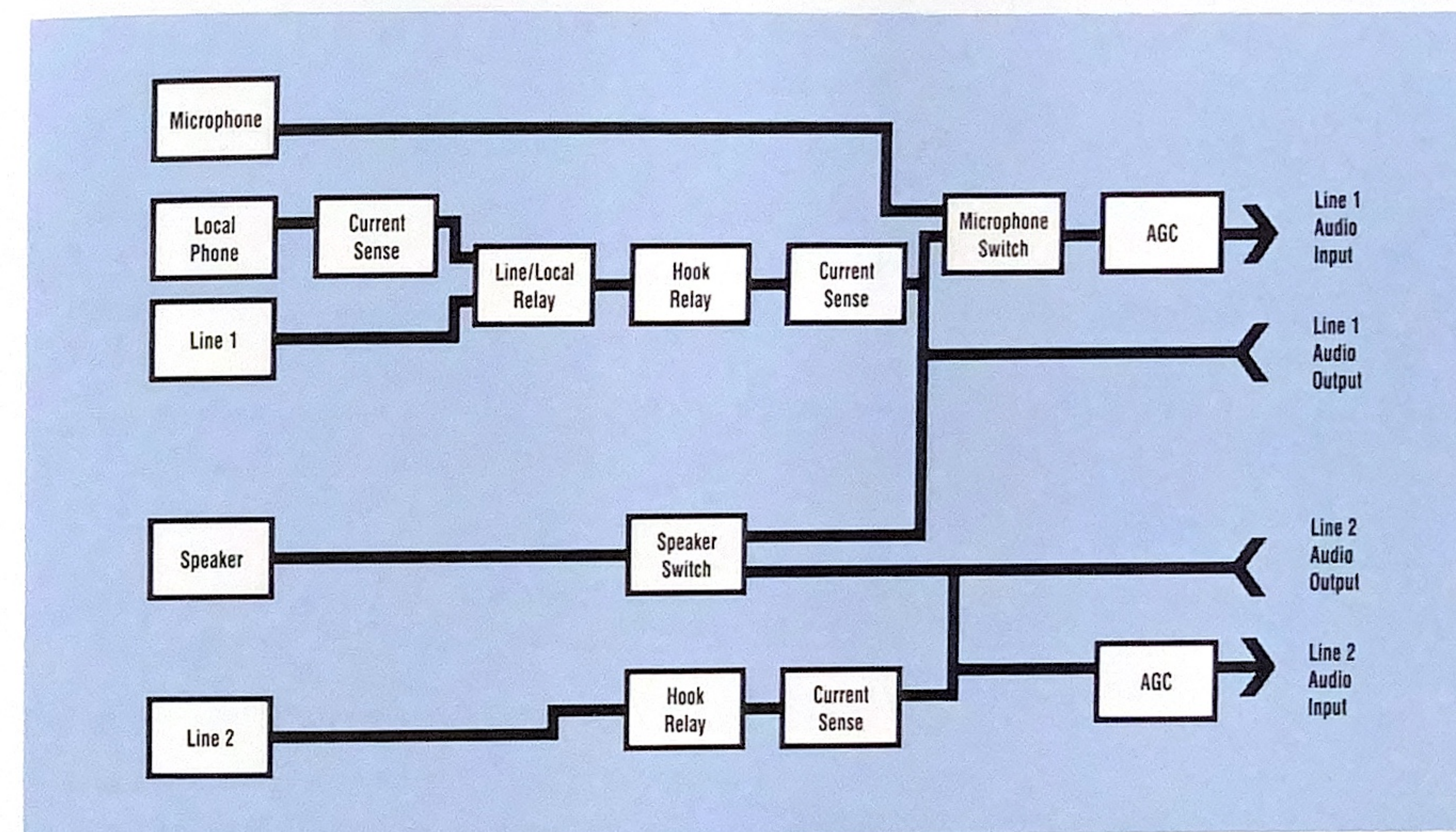
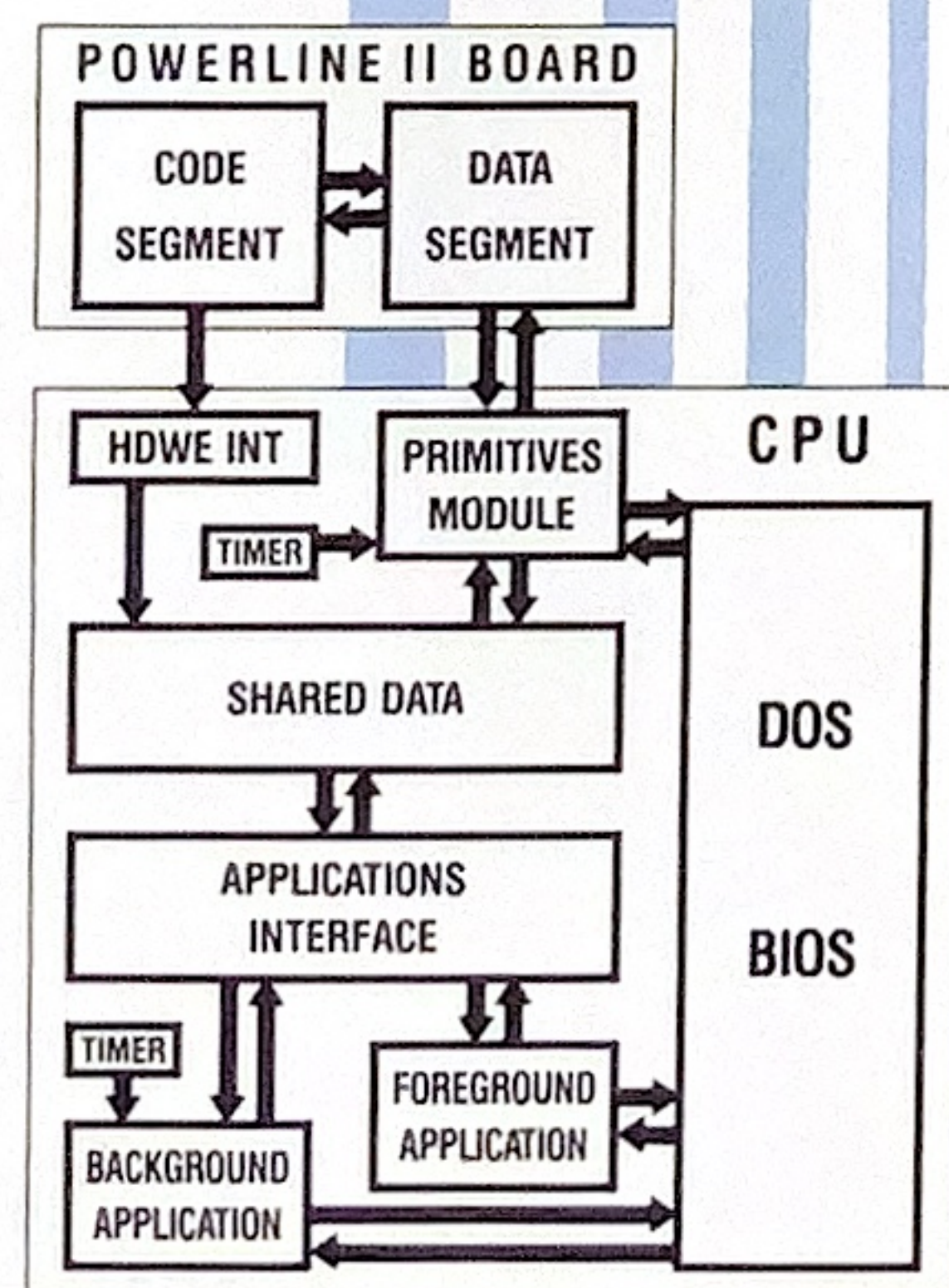
Powerline II comes standard with call progress monitoring support. Call progress determination is essential for outbound calling applications, message forwarding, or for call transferring. Call progress monitoring reports detection of dialtone, rings, busies, trunk busies, or voice, allowing intelligent call handling by the application. Line monitoring reports loop current events, silence detection, and caller hangups.

TOUCHTONE AND PULSE DIALING

Applications can receive input from callers by detecting and decoding DTMF signalling (Touchtone) or Rotary dial pulses. Powerline II can also dial out or send digits to other telephone equipment using DTMF or Pulse dialing.

SPEECH COMPRESSION

Digital recording and playback allows Powerline II to produce high quality real-voice reproductions. Five compression rates ranging from 14 to 56 Kbits/second allow flexible software control over sound quality and data storage rates.



THEORY OF OPERATIONS

Each Powerline II card is equipped with dual microprocessors. The 8098 microprocessor manages data compression and decompression for recording and playback, while the 8032 microprocessor communicates with the host PC and manages other system tasks. The 8098 device has a built-in 10 bit analog-to-digital converter, sample-and-hold, and multiplexer for sampling of the audio input during recording operations. Recording data is compressed using a proprietary algorithm and transferred to the 8032. Data is transferred to the host PC for storage in a standard DOS file by the Commando driver.

During playback, data is read from the DOS file and then transferred to the 8032. The 8032 sends the data to the 8098 for decompression and playback through the dual on-board digital-to-analog converters.

Powerline II communicates with the host PC through a dual-ported memory device mapped to the host address space. Commands which operate the card's features are sent by the Commando driver by writing to this memory area. The memory area is also used to notify the driver of events and to transfer recording data to and from the card.